

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
21 April 2005 (21.04.2005)

PCT

(10) International Publication Number
WO 2005/034730 A2

(51) International Patent Classification⁷:

A61B

(21) International Application Number:

PCT/US2004/032897

(22) International Filing Date: 6 October 2004 (06.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/508,924 6 October 2003 (06.10.2003) US

(71) Applicant (*for all designated States except US*): CRS & ASSOCIATES [US/US]; 1508 Hess Street, Columbus, OH 43212 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): ROBERTS, Cynthia, J. [US/US]; 4259 Lyon Drive, Columbus, OH 43220 (US). SARVER, Edwin, J. [US/US]; 131 Phillips Road, Carbondale, IL 62902 (US). MAROUS, James, R. [US/US]; 1931 Lakeview Drive, South Vienna, OH 45369 (US).

(74) Agent: GREENER, William; Bond, Schoenbeck & King, PLLC, 10 Brown Road, Suite 201, Ithaca, NY 14850 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

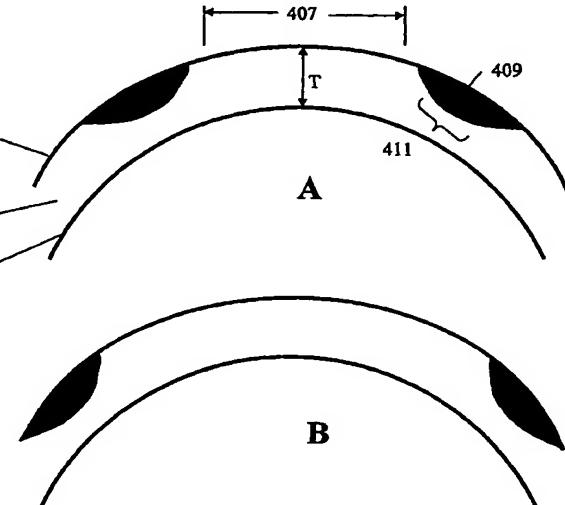
(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR ENHANCED CORNEAL ACCOMMODATION



WO 2005/034730 A2

(57) Abstract: A method and apparatus related to enhancing corneal accommodation to address the effect of presbyopia. Corneal/scleral topology measurements in accommodation and non-accommodating states are indicative of a presbyopic subject's nominal corneal accommodative power. A desired accommodative power intended to improve on the effect of presbyopia can be determined, suggesting a selective biomechanical intervention in the corneal structure outside of the optical zone to create flexure regions. These flexure regions would allow enhanced corneal accommodation upon presentation of an accommodating stimulus. Intervention could be in the form of, for example, corneal surface ablation, intrastromal ablation, conductive keratoplasty (CK), laser thermal keratoplasty (LTK), and corneal and/or scleral implants. An improved topology measuring apparatus having an improved field of view and other attributes is disclosed.

BEST AVAILABLE COPY



Published:

- *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.